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FROM THE DESK OF:
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|---|---|---|---|
| **Examiner: Jasson H. Yoo ART UNIT: 3714** | **U.S. Patent & Trademark Office** | **(571) 273-8300** | |

**• MESSAGE •**

## SERIAL NO. 10/630,036 – John J. Giobbi



**Time:** 10:41am **Date:** Jan 16, 2007 **Emp. #:** 5427 **Billing #:** 47079-107USD1 **Total Pages (7):**

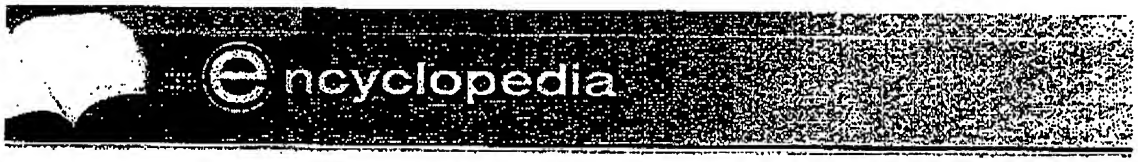


PAGE 1/7 * RCVD AT 1/16/2007 11:41:08 AM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:3124253909 2 * DURATION (mm-ss):02-00

Dear Examiner Yoo:

As per our discussion today, I am enclosing a proposed amendment to differentiate the encoding methods of the cited references and the encryption that the present claims perform. I am attaching a definition from PCMag.com which provides a technically understood meaning of cryptography which the proposed claim amendment is derived from. Unlike encoding which simply substitutes text in a predetermined pattern, encryption combines the key bits with the data bits to create ciphertext. As I mentioned, we would like to see if such an amendment may help to allow this case and would like the opportunity for either a formal or informal interview if you believe that it would help with allowing the case.

Wayne Tang
Reg. No. 36,028






Definition of: **cryptography**

The conversion of data into a secret code for transmission over a public network. The original text, or "plaintext," is converted into a coded equivalent called "ciphertext" via an encryption algorithm. The ciphertext is decoded (decrypted) at the receiving end and turned back into plaintext.

**Keys Are the Key**
The encryption algorithm uses a "key," which is a binary number that is typically from 40 to 256 bits in length. The greater the number of bits in the key (cipher strength), the more possible key combinations and the longer it would take to break the code. The data are encrypted, or "locked," by combining the bits in the key mathematically with the data bits. At the receiving end, the key is used to "unlock" the code and restore the original data.

## Secret Vs. Public Key

Secret key cryptography and public key cryptography are the two major cryptographic architectures.

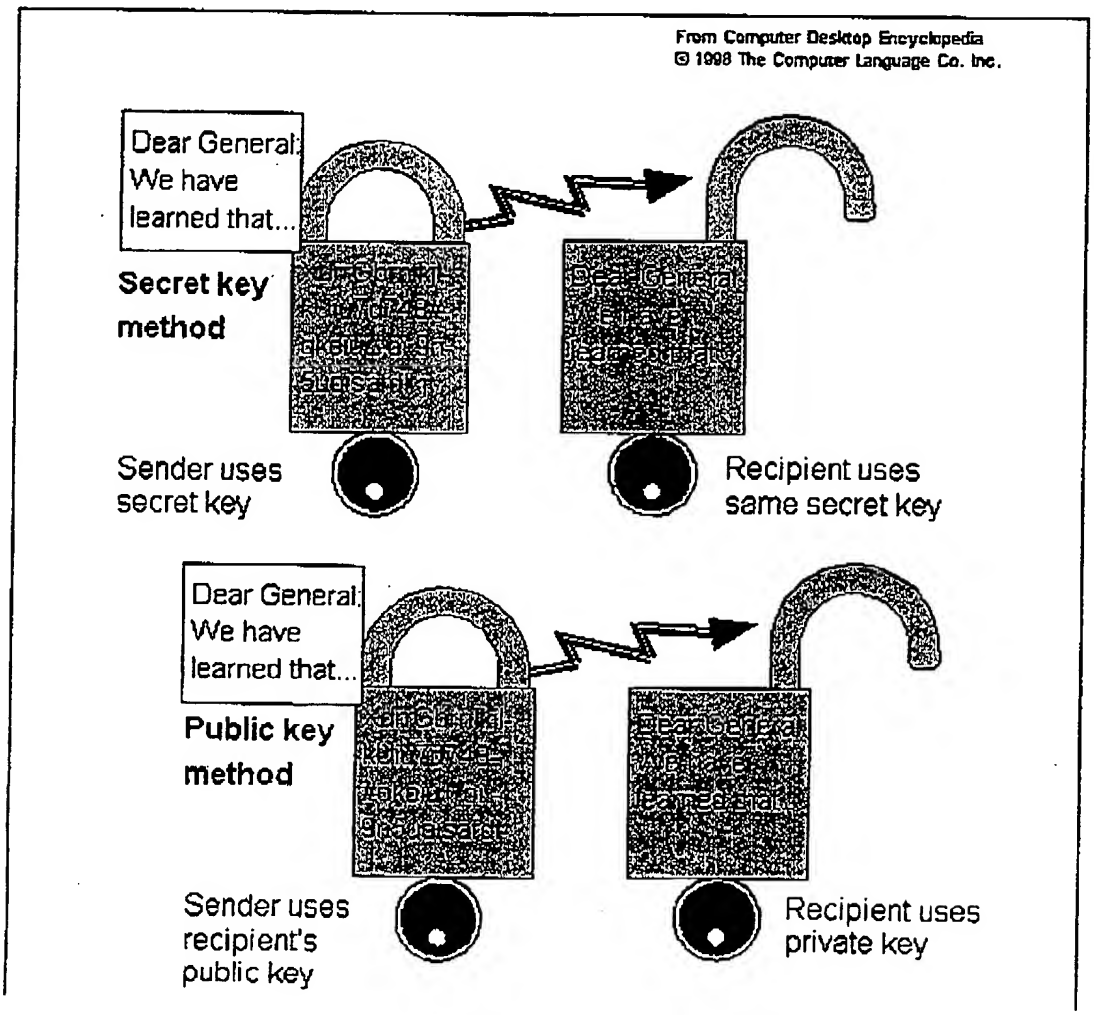
**Secret Keys - Symmetric System**
The first method uses a secret key, such as the DES and AES algorithms. Both sender and receiver use the same key to encrypt and decrypt. This is the fastest computation method, but getting the secret key to the recipient in the first place is a problem that is often handled by the second method.

**Public Keys - Asymmetric System**
The second method uses a two-part key, such as RSA and El Gamal. Each recipient has a private key that is kept secret and a public key that is published for everyone. The sender

looks up or is sent the recipient's public key and uses it to encrypt the message. The recipient uses the private key to decrypt the message and never publishes or transmits the private key to anyone. Thus, the private key is never in transit and remains invulnerable.

**Both Are Used Together**
Secret key and public key systems are often used together, such as the AES secret key and the RSA public key. The secret key method provides the fastest decryption, and the public key method provides a convenient way to transmit the secret key. This is called a "digital envelope." For example, the PGP e-mail encryption program uses one of several public key methods to send the secret key along with the message that has been encrypted with that secret key (see PGP).

**Get Faster - Get Stronger**
It has been said that any encryption code can be broken given enough time to compute all permutations. However, if it takes months to break a code, the war could already be lost, or the thief could have long absconded with the money from the forged financial transaction. As computers get faster, to stay ahead of the game, encryption algorithms have to become stronger by using longer keys and more clever techniques. See XOR, AES, DES, RSA, plaintext, digital signature, digital certificate, steganography and chaff and winnow.



**Secret Key Vs. Public Key**

The secret method uses the same key to encrypt and decrypt. The problem is transmitting the key to the recipient in order to use it. The public key method uses two keys: one kept private and never transmitted, while the other is made public. Very often, the public key method is used to safely send the secret key to the recipient so that the message can be encrypted using the faster secret key algorithm.

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# Some Public History About Secret Methods

The following is reprinted with permission from RSA Security, Inc.

In 1518, a Benedictine monk named Johannes Trithemius wrote "Polygraphiae," the first published treatise on cryptography. Later, his text "Steganographia" described a cipher in which each letter is represented by words in successive columns of text, designed to hide inconspicuously inside a seemingly pious book of prayer.

Polygraphiae and Steganographia attracted a considerable amount of attention not only for their meticulous analysis of ciphers but more notable for the unexpected thesis of Steganographia's third and final section, which claimed that messages communicated secretly were aided in their transmission by a host of summoned spirits.

As might be expected, Trithemius' works were widely renounced as having magical content - by no means an unfamiliar theme in cryptographic history - and a century later fell victim to the zealous flames of the Inquisition during which they were banned as heretical sorcery.

**RELATED TERMS:**

AES
chaff and winnow
DES
digital certificate
digital signature
PGP
plaintext
RSA
steganography
XOR

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